

## Horse-Chestnut Troubles

The horse-chestnut or buckeye is a common shade tree in the streets of our towns and is widely used in home grounds all over the state. It stands winter well, is a sturdy tree with graceful flower spikes, handsome foliage and of course, bears a supply of nuts very popular with the children. On the other hand, it is a somewhat slow growing tree and unless cared for, has a tendency to develop leaf-scorch; otherwise, it is usually a healthy tree. The most common troubles met with on the horse-chestnut are as follows:

### Frost Injury

In spring the leaves of horse-chestnut are started out at a time when frosts at night are not unusual and when the folded leafy umbrellas push out from the large sappy buds, a frost may injure their soft tissues, leaving tattered edges, jagged holes and dead streaks where the leaflets were creased in their folded condition. Such leaves present an unsightly appearance for the rest of the season. Nothing can be done about this trouble since one can hardly prevent frost injury.

### Wind Injury

When the broad soft leaflets are unfolding and spreading out to form the beautiful fan-shaped compound leaf, their tissues are very tender. If at this stage they are subjected to a high and gusty wind, there is likely to result a considerable tearing and bruising of the delicate leaflets. The foliage will show the effects of this injury all summer afterward in its torn and ragged aspect. Again there is nothing that can be done, either by way of preventing or curing this wind injury.

### Leaf Scorch

From mid-summer on many horse-chestnut trees become objectionably conspicuous because of the browning and dying of areas and patches of their leaves. While the killed areas are fairly large in this case they show a marked tendency to occur between the veins; many of them will start at the edge and extend toward the center, sharply bounded by the large veins. Late in the season one may note on the dead portion numerous small black dots like fly-specks. These are the spore producing bodies of the fungus which has already killed the tissue. If such leaves are allowed to remain around the tree over winter spores will be carried in spring by air currents from these leaves to the fresh new foliage, thus starting another season of leaf scorch.

The destruction in autumn of all old horse-chestnut leaves becomes for this reason a very useful practice. It does not matter much whether they are burned, or buried in soil, or carted away to some refuse heap, so long as they are removed from the neighborhood of the tree. It is true that spraying with lime sulfur 1-40 or with a weak Bordeaux mixture 3-4-50 about twice at intervals of three weeks during foliage development, will help a good deal to control this disease. But experience seems to indicate that if the fallen leaves are well disposed of the leaf scorch is not likely to be troublesome. This is especially true for trees which are well watered and fertilized so that they are kept in a vigorous condition.

### **Sun Scald**

The horse-chestnut is very likely to suffer from another trouble not easily distinguished from leaf scorch but due to entirely different causes. In a hot dry summer the leaves may turn brown around the edges and tips and many of them will turn yellow and fall off. There is no tendency for this type of leaf injury to occur between the veins. However, both scald and leaf scorch may be present together. This scalding of the foliage is the effect of heat but back of that, there are likely to be other causes. Among these are starvation, dry soil and thin or hard soil. This tree grows at its best in deep, rich soil with a constant but not excessive water supply. Most of the time the horse-chestnut is starving to death on city streets in a soil without humus or mineral elements, hard and packed, and from which both air and water are excluded by pavements. Under such conditions, a horse-chestnut tree can not supply the nutriment and water its top requires and the foliage is both starving and suffering from drought. Sun scald and leaf fall results.

The obvious remedy here is to provide the tree with a loose soil, abundant plant food and adequate water. A horse-chestnut happily situated will have a generous crown of large dark-green leaves, and such a tree will rarely show a trace of sun scald, yellow foliage and leaf fall. Applications of tree fertilizers may be made either by working it into the surface soil or placing it in holes a foot deep made with a crowbar and sledge. Water may be supplied by the hose or through a series of tiles set in the ground flush with the surface and filled as needed in dry weather.

### **Insect Troubles**

The foliage of horse-chestnut is sometimes practically destroyed by the white marked tussock moth. This insect over winters as eggs, which form conspicuous masses in the bark crevices on the underside of the larger limbs.

There are two ways of controlling this insect. One is by the destruction of the egg masses by removing and burning during the winter or early spring and the other is spraying of the tree with arsenate of lead. (About 4 ounces to 6 gallons which would be enough for one tree). The arsenate of lead is used at the rate of two pounds of the powder to fifty gallons of water applied when injury is first noticed.

At times the bag worm also attacks the foliage of horse-chestnut. This insect gets its common name from its peculiar habit of forming an oblong bag about itself as it feeds. The bag is composed of bits of leaves and leaf stems woven together with silk. This insect is also usually controlled by the application of arsenate of lead as given for the white marked tussock moth.

Two or three scale insects may be found on horse-chestnut. To control these insects spray with one of the spray oils in the dormant season, making sure to follow the directions as given on the oil container and to see that all parts of the tree are covered. Oil sprays should be applied when the temperature is above 45° F. and on a bright day.

